

## CLAIMS

What is claimed is:

1. A composite filter (200) comprising at least two cascading filters (202, 204) having passband ripples nearly equal in magnitude and out of phase with respect to each other in order to minimize a passband ripple in the composite filter (200).
2. A composite filter (200) as claimed in claim 1, characterized in that the magnitude of the passband ripples in the at least two cascading filters (202, 204) are equal.
3. A composite filter (200) as claimed in claim 1, characterized in that at least one of the at least two cascading filters (202, 204) comprises a digital filter (1002).
4. A composite filter (200) as claimed in claim 1, characterized in that at least one of the at least two cascading filters (202, 204) comprises an analog filter (302).
5. A composite filter (200) as claimed in claim 1, characterized in that at least one characteristic of the at least two cascading filters (202, 204) is selected to minimize the passband ripple in the composite filter (200).
6. A composite filter (200) as claimed in claim 5, characterized in that the at least one characteristic comprises the order of the at least two cascading filters (202, 204).
7. A composite filter (200) as claimed in claim 6, characterized in that at least one filter is an even order filter (302) and at least one filter is an odd order filter (304).
8. A composite filter (200) as claimed in claim 7, characterized in that the even order and the odd order differ in value by one.
9. A composite filter (200) as claimed in claim 5, characterized in that the at least one characteristic comprises a bandwidth of the at least two cascading filters (202, 204).
10. A composite filter (200) as claimed in claim 5, characterized in that the at least one characteristic comprises a stopband attenuation of the at least two cascading filters (202, 204).
11. A method for passband ripple cancellation in cascading filters to minimize a passband ripple in a composite filter (200) comprising the steps of: providing at least two filters (202, 204) having passband ripples nearly equal in magnitude and out of phase with respect to each other in order to minimize the passband ripple in the composite filter (200).
12. A method as claimed in claim 11, characterized in that the magnitudes of the passband ripples in the at least two cascading filters (202, 204) are equal.
13. A method as claimed in claim 11, characterized in that at least one of the at least two cascading filters (202, 204) comprises a digital filter (1002).

14. A method as claimed in claim 11, characterized in that at least one of the at least two cascading filters (202, 204) comprises an analog filter (302).

15. A method as claimed in claim 11, characterized in that at least one filter characteristic for the at least two cascading filters (202, 204) is selected to minimize the passband ripple in the composite filter (200).

16. A method as claimed in claim 15, characterized in that the at least one filter characteristic includes a bandwidth for the at least two cascading filters (202, 204).

17. A method as claimed in claim 15, characterized in that the at least one filter characteristic includes a stopband attenuation for the at least two cascading filters (202, 204).

18. A method as claimed in claim 15, characterized in that the at least one filter characteristic includes an order for the at least two cascading filters (202, 204).

19. A method as claimed in claim 18, characterized in that at least one of the at least two cascading filters (202, 204) has an even order and at least one of the at least two cascading filters (202, 204) has an odd order.

20. A method as claimed in claim 19, characterized in that the even and the odd orders differ in value by one.